LineUp With Math™ Alignment
Voluntary State Curriculum
Mathematics

Standard 1.0 Knowledge of Algebra, Patterns, and Functions
Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.

Topic B. Expressions, Equations, and Inequalities

Indicator 2. Identify, write, solve, and apply equations and inequalities

Objectives	*LineUp With Math™* Activities
e. Apply given formulas to a problem solving situation	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

Standard 3.0 Knowledge of Measurement
Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools or technology for determining measurements.

Topic C. Applications in Measurement

Indicator 2. Analyze measurement relationships

Objectives	*LineUp With Math™* Activities
b. Determine the distance between 2 points using a drawing and a scale	-- Predict and plot the relative motion of two or more airplanes on given paths.

Standard 6.0 Knowledge of Number Relationships and Computation/Arithmetic
Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

Topic C. Number Computation

Indicator 1. Analyze number relationships and compute

Objectives	*LineUp With Math™* Activities
g. Determine percent of a number	--Use percent relationships to resolve distance, rate, time conflicts in air traffic control.

Indicator 3. Analyze ratios, proportions, and percents

Objectives	*LineUp With Math™* Activities
b. Determine and use rates, unit rates, and percents as ratios in the context of a problem	--Use an interactive simulator plus calculation worksheets to apply proportional reasoning to identify and resolve distance, rate, time conflicts in air traffic control.

	--Use percent relationships to resolve distance, rate, time conflicts in air traffic control.
c. Determine rate of increase and decrease, discounts, simple interest, commission and sales tax	--Use percent relationships to resolve distance, rate, time conflicts in air traffic control.
d. Determine percent of a number	--Use percent relationships to resolve distance, rate, time conflicts in air traffic control.

Standard 7.0 Process of Mathematics Students demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.	
Topic A. Problem Solving	
Indicator 1. Apply a variety of concepts, processes, and skills to solve problems	
Objectives	***LineUp With Math™* Activities**
a. Identify the question in the problem	--Use an interactive simulator to identify distance, rate, time conflicts in air traffic control problems and resolve the conflicts by varying plane speeds.
b. Decide if enough information is present to solve the problem	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.
c. Make a plan to solve a problem	--Explore and apply a variety of strategies to optimize the solution of air traffic control conflicts.
d. Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.
e. Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	--Choose and apply a variety of strategies to optimize the solution of air traffic control conflicts.
f. Identify alternative ways to solve a problem	--Explore and apply a variety of strategies to optimize the solution of air traffic control conflicts.
h. Extend the solution of a problem to a new problem situation	--Use an interactive simulator to identify distance, rate, time conflicts in air traffic control problems and resolve the conflicts by varying plane speeds or changing plane routes.

Topic B. Reasoning	
Indicator 1. Justify ideas or solutions with mathematical concepts or proofs	
Objectives	***LineUp With Math™* Activities**
a. Use inductive or deductive reasoning	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
b. Make or test generalizations	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
c. Support or refute mathematical statements or solutions	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
Topic C. Communications	
Indicator 1. Present mathematical ideas using words, symbols, visual displays, or technology	
Objectives	***LineUp With Math™* Activities**
a. Use multiple representations to express concepts or solutions	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.
b. Express mathematical ideas orally	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.
c. Explain mathematical ideas in written form	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.
d. Express solutions using concrete materials	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.
e. Express solutions using pictorial, tabular, graphical, or algebraic methods	--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.
f. Explain solutions in written form	--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.